APPENDIX 3

Data Validation Reports

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1.0 DATA VALIDATION REPORTS

Analytical data reported by the CLP contracted laboratories underwent full data validation. Data validation was performed by the Environmental Services Assessment Team (ESAT) on all the environmental samples in accordance with the EPA Region IX guidance. The analytical results were reviewed according to the EPA Laboratory Data Validation Functional Guidelines for Evaluating Organic Analyses, 1988 and Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses, 1988.

The validation process is used to evaluate whether the analytical procedures requested were properly followed, and to assess the quality and useability of the data generated.

The following subsections contains summaries of the data validation findings related to organic and inorganic analyses. Within each subsections, the results for each method is discussed. The discussion includes the use of EPA data qualifiers (Table 1-1), and references data validation reports which are presented in Attachment A.

1.1 PESTICIDES/PCBS ANALYSIS

Data validation was performed on nineteen groundwater data results. All groundwater samples analytical results were non-detects (NDs) including the water source sample.

Holding times for all samples were acceptable. All calibration standards were performed with acceptable results. Therefore, no qualifiers were necessary based on those information.

Nine laboratory method blanks were analyzed for pesticides/PCBs. A laboratory method blank is laboratory reagent water consisting of all reagents, surrogates and internal standards processed through the sample preparation and analytical procedures as the field samples. All method blanks associated with the environmental and quality assurance samples were analyte-free (non-contaminated). The laboratory method blank is used to determine the level of contamination introduced by the laboratory during extraction and analysis.

To satisfy field QC requirements, one equipment rinsate was collected. An equipment rinsate is reagent water that has been collected as a sample using decontaminated sampling equipment. The equipment rinsate data results were also non-detect.

All matrix spikes sample were within the acceptable limits. Surrogate recovery for SDG no. YM983, was outside the control limits. Surrogates are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with surrogate compounds prior to sample preparation. Surrogates provide information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

Table 1-1

DATA VALIDATION DATA QUALIFIER

Qualifier	Organic	Inorganic
U	The analyte was analyzed for, but was not detected above the reporting sample quantitation limit.	The analyte was analyzed for but was not detected above the level of the reported value. The reported value is the Instrument Detection Limit (IDL) for waters and Method Detection Limit (MDL) for soils for all analytes except for Cyanide (CN) and Mercury (Hg). For CN and Hg, the reported value is the Contract Required Detection Limit (CRDL).
L	Indicates results which fall below the Quantitation Limit. Results are estimated and are considered qualitatively acceptable but qualitatively unreliable due to uncertainties in the analytical precision near the limit of detection.	The analyte was analyzed for but results between the IDL for waters or MDL for soils and the CRDL. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.
J	Analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The analyte was analyzed for, but was positively identified, but the reported numerical value may not be consistent with amount actually present in the environmental sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	A combination of "U" and "J" qualifier. The analyte was analyzed for but was not detected above the reported value. The reported value may not accurately or precisely represent the sample IDL or MDL.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.	The analyte was analyzed for, but the presence of the analyte has been verified. Resampling and reanalysis are necessary to confirm or deny the presence of the analyte.

In sample MUNI-109-01, the quantitation limits were qualified estimated (J) for dieldrin, 4-4'-DDE, endrin, endosulfan sulfate, 4-4'-DDT, methoxychlor, endrin ketone, endrin aldehyde, alpha-chlordane, gamma-chlordane, toxaphene, arochlor-1248, arochlor-1254 and arochlor-1260. Because the results for all the above target compounds are NDs, false negatives may exist.

All environmental and quality control analytical results for pesticide/PCBs are considered valid.

1.2 SEMIVOLATILE ORGANICS ANALYSIS

Data validation was performed on nineteen groundwater data results. All groundwater samples analytical results were non-detects (NDs) except for samples MUNI-107-02, MUNI-109-01, and WEQ109-01. See validation report Case/SAS No. LV3S39 Memo #08, SDG NO. YM983.

Holding times for all samples were acceptable. All GC/MS tunes met the criteria specified in the organic CLP SOW (3/90) and are, therefore, acceptable.

Due to poor response of the initial and continuing calibration standards, the quantitation limit of 2,4-dinitrophenol was estimated in all the samples. Since 2,4-dinitrophenol results for all samples are ND, false negatives may exist.

Eight laboratory method blanks were analyzed for semivolatile organics. Four of the method blanks showed laboratory contaminants. In SDG no. YM983, due to laboratory and equipment blank (WEQ109-01), the results reported for the following analytes were qualified estimated (J): di-n-butylphthalate in sample numbers MUNI-107-01, and MUNI-109-01; bis(2-ethylhexyl)phthalate in sample numbers MUNI-103-01, MUNI-107-01 and MUNI-109-01; and di-n-octylphthalate in sample number MUNI-107-01.

In SDG no. YM987, although not detected in the laboratory method blanks, dimethylphthalate and bis(2-ethylhexyl)phthalate have been found historically as a common laboratory blank contaminants. The data validator felt that both compounds found in all the samples are laboratory artifacts and qualified them as estimated (J). Bis(2-Ethylhexyl)phthalate was qualified as estimated (J) in samples WMW-113-01, WMW-114-01, and WMW-114-02. The affected samples were qualified for the above target compounds because they were detected at less than ten times the level in their associated laboratory method blanks and equipment rinsate.

All matrix spikes and surrogate percent recoveries were within the QC limits and acceptable. One equipment rinsate (WEQ109-01) was collected as the field QC sample. In addition, a water blank source sample (WA01-01) was sent to the laboratory for analysis. The equipment rinsate sample showed di-n-butylphthalate and bis(2-ethylhexyl)phthalate contamination. The water blank source sample did not show any presence of semivolatile contamination.

Tentative identified compounds (TICs) were found present in several samples. All the TICs found present in samples MUNI-105-01, MUNI-101-01, MUNI-104-01, MUNI-102-01, MUNI-107-01, MUNI-109-01, WEQ109-01, WMW-114-01, and WMW-114-02 were qualified as estimated (J).

All environmental and QC analytical results for semivolatile organics are considered valid and usable.

1.3 DRINKING WATER VOLATILE ORGANICS

Data validation was performed on 75 groundwater data results. Several samples were analyzed from one to three days past the contractual holding time of 10 days. The reviewer felt that this did not affect the quality of data except for samples WMW01D-21 and WMW01A-21. The data results were also qualified as estimated (J) for all target analytes. In addition, dichlorodifluoromethane and tetrachloroethene in samples WMW-11-21 and WMW-12-21 (SDG no. SY5624) were qualified as estimated (J). Both samples were initially analyzed within the holding time, but the response of both compounds exceeded the calibration range. Both samples were diluted and reanalyzed. Reanalysis of both samples missed the technical holding times by 16 days.

Many of the calibration standards associated with all the samples results had at least one target compound with relative standard deviations (RPDs) and/or percent difference (%D) outside the allowable QC limits except for 1,2-dibromo-3-chloropropane (DBCP). All the samples were qualified as estimated (J) for DBCP. Reported values for SDG No. SY5589 for methylene chloride, 2-chloroethylvinylether, dibromomethane and 1,2,3-trichloropropane were qualified as estimated (J), and nondetects were qualified as NDs at an estimated quantity (UJ). Also, in SDG no. SY5624, 2-chloroethylvinylether in samples WMW08B-21, WMW08B-22, WFI109-01, WEQ109-01 WTR10-01 were qualified as estimated (J). See data validation report Case/SAS no. SAS 7841Y Memo #02, SDG no. SY5589 and Case/SAS no. 7841Y, Memo #04, SDG No. SY5624 in Attachment A.

Sixteen laboratory method blanks were analyzed for VOAs. All laboratory method blanks were found to be free of target compounds, therefore, no qualifications were necessary. The water source sample WA01-01, showed methylene chloride, chloroform and toluene contamination. A water source blank is intended to detect contamination in the organic-free water used to create field QC blanks such as trip, field and equipment blanks.

Field QC samples included eight trip blanks, five field blanks and three equipment rinsates. All field QC samples showed methylene chloride, chloroform and toluene contamination which are inborn contamination identified in the water source sample.

A trip blank is organic-free water poured into preserved 40 ml vials at an off-site location. Trip blanks are stored with the collected samples and shipped along with the samples in coolers. It is used to detect contaminants introduced during the transport of the samples to the laboratory.

A field blank is organic-free water poured into preserved 40 ml vials at a specific sampling location during sampling. Field blanks are intended to detect contaminants that may be introduced in the field during sample collection. Data results for the following target analytes were qualified as estimated (J) and quantitation limits were raised according to the blank qualification rule either part and/or all field QC samples contamination:

- Methylene chloride - WMW-09-21, WTR07-01, WMW01H-21, and WMW-115-01
- Chloroform - WMW-09-01, WTR07-01, WMW03B-21, WMW05B-21, and WMW-11-21.

- Toluene - MUNI-16-21, MUNI-19-01, WMW-01E-22, WMW01D-21, WMW01A-21, WMW07A-21, WMW07B-01, WMW01J-01, WMW-01B-21, WMW-09-21, WTR07-01, WMW01C-21, WMW01H-21, WMW08B-21, WMW08B-22, WMW01G-21, WMW01J-21, and WMW-12-21.

- Trichlorofluoromethane - WMW-113-01, WMW-114-01, WMW-114-02 and WMW-115-01.

- Tetrachloroethane - WMW06B-01, WMW08A-21, WMW04A-21, and WMW05B-21.

See the corresponding validation reports in Attachment A. Note that no positive results were reported for the above analytes unless the concentration of the compound in the sample exceeded 10 times the amount in any associated blank or the common laboratory contaminants or 5 times the amount for other compounds. For sample result greater than the CRQL, the quantitation limit was raised to the sample result and sample result less than CRQL, the results was reported as nondetect (U, J).

Laboratory fortified blank (LFB) percent recovery of dichlorofluoromethane was found outside the SAS QC limits in SDG 5611, samples WMW-09-21, WFI09-01, MUNI-103-01, WTR07-01, WMW01C-21 and WMW01H-21. The data results for the above mentioned samples were qualified as estimated (J). The purpose of the LFB is to serve as a monitor of the overall performance of all steps in the analysis including sample preparation under ideal conditions. All matrix spikes and surrogate percent recoveries were within the QC limits and acceptable. No TICs were found in all environmental and field QC samples.

1.4 TOTAL PETROLEUM HYDROCARBONS

Data validation was performed on eighteen groundwater data results. All groundwater samples analytical results were non-detects (NDs).

Holding time for all samples were met. All the QC requirements specified in the SAS request contract were met.

Gasoline analysis was performed using the headspace method. The laboratory encountered analytical problems regarding the surrogates for gasoline and diesel analyses and low response was obtained for diesel in the initial calibration. The laboratory did not perform a method detection limit (MDL) study for diesel as specified in the SAS request. However, as a corrective action, the laboratory did analyze a low level 50 mg/l standard to demonstrate sensitivity and linearity down to a concentration of 0.25 mg/l. As for gasoline surrogate deficiency, Sample Management Office (SMO) instructed the laboratory not to report the surrogate recoveries.

The results for total petroleum hydrocarbons as gasoline and diesel in all of the samples were acceptable and usable.

1.5 TOTAL METALS

Data validation was performed on 38 groundwater data results. The holding time of 180 days for all samples was met.

Field QC samples collected are two equipment blanks WEQ02B-01 and WEQ03B-01. Iron was detected above the CRDL (100 $\mu g/\ell$) at a concentration of 172 $\mu g/\ell$ in the equipment blank, WEQ03B-01. Iron was found in the associated samples WMW06A-01 and WMW06B-01, at concentrations greater than ten times the concentration found in the equipment blank. Therefore, both sample results were not affected. However, in samples WMW01F-21, WMW01E-21, WMW01E-22, WMW01D-21, and WMW01A-21 iron was found less than ten times in the equipment blank. Because no equipment blanks were collected with the batch of samples, it is unknown whether the iron is due to field contamination. Therefore, no qualification was necessary.

Four (one per SDG) laboratory method blanks were analyzed. Laboratory method blanks showed the following contaminations:

- SDG no. MYL266 - calcium (Ca), chromium (Cr), iron (Fe), magnesium (Mg), sodium (Na), vanadium (Va), and zinc (Zn).
- SDG no. MYL225 - aluminum (Al), barium (Ba), beryllium (Be), Cr, copper (Cu), Fe, and Zn.
- SDG no. MYL241 - Al, Ca, Fe, Mg, selenium (Se), and Zn.
- SDG no. MYL259 - Ca, Fe, potassium (K), Na, and Zn.

All associated sample results detected greater than the instrument detection limit (IDL) but less the CRDL were qualified as estimated (J).

In metal analysis, a post-digest analytical spike is perform for each sample analyzed by graphite furnace atomic absorption (GFAA) technique, to establish the accuracy of the individual analytical determination. Matrix spikes percent recoveries were not within control limits for Se in SDG nos. MYL241 (WMW08B-22, WMW08A-21, WMW01B-21, MUNI-103-01, WMW-11-21, WMW-12-21, MUNI-107-01, and MUNI-109-01) and MYL259 (WMW-114-01 and WMW-115-01). Lead and silver in the water source blank (WA01-01). Data results for all the samples were qualified as estimated (J).

Field duplicate samples WMW08B-21 and WMW08B-22 RPDs were outside the QC limits for Al, Ca, Mg, and Zn. The imprecision in the results of the analysis of the field duplicate pair may be due to the sample matrix, poor sampling or laboratory technique, or method defects. The analysis of a field duplicate samples is a measure of the field and analytical precision. The effect on the quality of the data is not known.

1.6 TOTAL DISSOLVED SOLIDS

Data validation was performed on 35 groundwater data results. Holding times for all samples were met.

All of the QC requirements specified in the SAS request have been met except for SDG No. SY5673, the RPD obtained for the duplicate pair sample was outside the QC limit of $\pm$ 20%. An 84.3% RPD was obtained, the imprecision in duplicate pair analysis may be due to the sample matrix, high levels of solids in the sample, poor sampling or laboratory technique, or method defects. The effect on the quality of the data is not known.

1.7 GENERAL CHEMISTRY ANALYSES (CHLORIDE, NITRATE, SULFATE, FLUORIDE, TOTAL ALKALINITY, BICARBONATE, CARBONATE, HYDROXIDE, TOTAL HARDNESS, PH AND SPECIFIC CONDUCTANCE)

Data validation was performed on 35 groundwater data results. Holding times for all samples were met except for sample MUNI-105-01. Nitrate analysis was not perform per SMO instruction because the sample was received by the laboratory after the expiration date.

Detection limits for nitrate in samples WMW01J-21, WMW-103-21 and WMW01I-21 were raised with their corresponding dilution factors.

All of the QC requirements specified in the SAS request have been met except for alkalinity and total hardness analyses. In SDG nos. SY5673 and SY5684, the sulfuric acid titrant (0.10 N and 0.05 N H_2SO_4) was not standardized on a daily basis and the normality of the EDTA titrate for hardness analysis was not checked at the beginning of each day of analysis. The validator felt that the above non-compliant with the SAS request protocols did not affect the quality of the data. The data results were acceptable and usable.

2.0 DATA QUALITY SUMMARY

The holding times for all the samples were met except for several environmental samples analyzed for semivolatile organics; however, the data results were not adversely affected.

Several initial and calibration standards displayed poor response for semivolatiles and drinking water organics, associated samples results with at least had one or more target compound with relative standard deviations (RPDs) and/or percent difference (%D) outside the allowable QC limits were qualified accordingly.

Surrogates were added to samples to monitor the effect of the matrix on the accuracy of the analysis. The surrogate percent recovery for all the organic analysis were within the control limits specified in the CLP SOW. Sample results that fell outside of the quality control limit range were flagged accordingly.

Because duplicate data results analyzed by the laboratories did not show any detections for pesticides/PCBs, semivolatile organics, TPH gas and diesel, precision were not calculated. Precision values greater than 20% for target compounds detected in the duplicated pairs less than five times the reporting limits were not included because the difference of the concentration values measured were small that calculation of precision will automatically yield high percent values (i.e., VOC results 0.2 and 0.3, difference is 0.1, yield 40% RPD). Three pairs of duplicate samples were collected for drinking water volatile organics. Duplicate results for drinking water volatile organics indicated from five to seven detections of which two are outside the acceptable criteria of 20% (freon 12, and PCE in duplicate pair collected in MW08B).

Total metals had seven pairs of duplicate samples. Duplicate results for total metals indicated detections above the CRDL. Five of seven duplicate samples had at least one detection outside the acceptable criteria of 20%. Duplicate pair collected from MW08B had seven detections outside the acceptable criteria. The precision values detections greater than 20% range from 22% to 137% (see Table 2-1). The effect of imprecision of the duplicate pair analysis to the quality of the data is not known.

Four pairs of duplicate samples were collected for general chemistry. The duplicate sample was analyzed for pH, EC, TDS, bicarbonate, carbonate, alkalinity, chloride, fluoride, nitrate, sulfate, and total hardness. The precision calculated for the above parameters was within the acceptance criteria except total dissolved solids in MW08B duplicate sample. Precision for total dissolved solids is 84%.

Field and laboratory QA data were assessed for compliance with established quality assurance standards. Detectable concentrations of target compounds were found in field quality assurance samples and discrepancies were noted in the laboratory quality assurance samples. However, a thorough review of these data indicates that these QA discrepancies do not adversely affect the quality or validity of the environmental and QA sample results presented in this report. All valid analytical data generated are usable for all purposes.

Table 2-1

SUMMARY OF PRECISION FOR DUPLICATE SAMPLES

Analysis	Location	EPA Sample #	Analyte	D_1	D_2	Precision
Drinking Water Volatiles	MW01E	SY5608 SY5611	cis-1,2-DCE	0.2	0.2	0
			1,1,1-TCA	0.2	0.2	0
			TCE	0.4	0.4	0
			Xylenes (Total)	0.2	0.3	40
			1,2,4-Trimethylbenzene	0.1	0.1	0
	MW08B	SY5601 SY5602	Freon 12	7	8	13
			Freon 11	0.6	0.7	15
			1,1-DCA	0.5	0.5	0
			cis-1,2-DCE	0.6	0.7	15
			Benzene	0.2	0.1	67
			TCE	0.8	1	22
			PCE	8	10	22
	MUNI-14	SY5585 SY5586	Freon 12	26	33	24
			Freon 11	4	4	0
			trans-1,2-DCE	0.1	0.1	0
			cis-1,2-DCE	1	1	0
			TCE	4	4	0
			PCE	18	20	11
	MUNI	SY5570 SY5571	Freon 12	8	8	0
			Freon 11	0.8	0.8	0
			cis-1,2-DCE	0.6	0.6	0
			TCE	0.5	0.5	22
			PCE	6	6	0
	MW-114	SY5637 SY5638	Freon 12	2	2	0
			cis-1,2-DCE	0.3	0.2	40
			PCE	4	4	0
			Isopropylbenzene	2	2	0

Table 2-1 (Cont'd.)

SUMMARY OF PRECISION FOR DUPLICATE SAMPLES

Analysis	Location	EPA Sample #	Analyte	D_1	D_2	Precision
Total Metals	MW01E	MYL243 MYL244	Al	65.1	34.1	62
			Ba	41.6	41.1	1
			Be	0.48	0.48	0
			Ca	19500	19900	2
			Cu	3.2	3.2	0
			Fe	348	315	10
			Mg	16900	17000	1
			Mn	8.0	8.0	0
			K	5990	6460	8
			Na	20300	20500	1
			Zn	6.4	5.0	25
	MW08B	MYL239 MYL240	Al	462	2460	137
			Ba	12.5	46.3	115
			Ca	10500	46200	126
			Cr	5.7	11.6	68
			Co	4.7	5.7	19
			Cu	5.3	6.9	26
			Fe	28800	29800	3
			Pb	2.0	3.0	40
			Mg	11100	16200	37
			Mn	288	306	6
			K	4570	5250	14
			Na	22700	20500	10
			Zn	252	1230	132
	MUNI-104	MYL227 MYL228	Al	38.3	27.4	33
			Ba	52.4	52.7	1
			Be	0.47	0.48	2
			Ca	79600	78600	1
			Cu	8.0	6.4	22
			Fe	102	93.5	9
			Mg	17100	17000	1
			Mn	2.8	2.8	0
			K	3050	2890	5
			Na	17800	17800	0
			Zn	11.5	11.8	3

Table 2-1 (Cont'd.)

SUMMARY OF PRECISION FOR DUPLICATE SAMPLES

Analysis	Location	EPA Sample #	Analyte	D_1	D_2	Precision
Total Metals (Cont'd.)	MW-114	MYL261 MYL262	Ba	66.9	65.6	2
			Ca	99500	97000	3
			Fe	11.2	14.0	22
			Pb	0.95	1.0	5
			Mg	20000	19600	2
			Mn	246	240	2
			K	4800	4970	3
			Na	15400	15200	1
Water Chemistry	MW01E	SY5668 SY5669	pH	8.1	8.2	1
			EC (μS/cm)	343	341	1
			TDS	194	196	1
			Bicarbonate *	61.0	62.8	3
			Chloride	17.7	17.6	1
			Fluoride	0.27	0.25	8
			Nitrate	0.52	0.53	2
			Sulfate	47.6	47.6	0
			Alkalinity	100	103	3
			Bicarbonate	100	103	3
			Total Hardness	126	136	8
	MW08B	SY5664 SY5665	pH	6.9	6.9	0
			EC (μS/cm)	641	572	11
			TDS	153	376	84
			Bicarbonate *	186	159	16
			Chloride	6.2	6.2	0
			Fluoride	0.23	0.23	0
			Nitrate	1.4	1.2	15
			Sulfate	32.7	28.0	15
			Alkalinity	305	261	16
			Bicarbonate	305	261	16
			Total Hardness	73.9	73.9	0

Table 2-1 (Cont'd.)

SUMMARY OF PRECISION FOR DUPLICATE SAMPLES

Analysis	Location	EPA Sample #	Analyte	D_1	D_2	Precision
Water Chemistry (Cont'd.)	MUNI-104		pH	7.0	7.4	6
			EC (μS/cm)	571	582	2
			TDS	324	364	12
			Bicarbonate *	154	140	10
			Chloride	8.1	8.0	1
			Fluoride	0.63	0.63	0
			Nitrate	3.5	3.5	0
			Sulfate	56.9	56.8	0
			Alkalinity	253	229	10
			Bicarbonate	253	229	10
			Total Hardness	283	293	3
	MW-114	SY5685	pH	6.7	6.6	2
		SY5686	EC (μS/cm)	641	650	1
			TDS	381	393	3
			Bicarbonate *	185	184	1
			Chloride	4.8	4.9	2
			Fluoride	0.28	0.29	4
			Nitrate	3.3	3.3	0
			Sulfate	37.0	36.9	0
			Alkalinity	303	298	2
			Bicarbonate	303	298	2
			Total Hardness	326	332	2

Note: Only Result > CRDL was calculated for precision. Precision = $\frac{D_1 - D_2}{D_1 + D_2/2} \times 100$

* Represents the concentration of the radical. Other values represent alkalinity concentrations as $CaCO_3$.

** Analyte exceeded the acceptable criteria of 20% for precision.

RPDs could only be calculated for constituents detected in both samples.
D_1 corresponds to the first EPA sample number listed for the pair, D_2 corresponds to the second EPA sample number listed.

Table 2-1 (Cont'd.)

SUMMARY OF PRECISION FOR DUPLICATE SAMPLES

cis-1,2-DCE = cis-1,2-Dichloroethene
1,1,1-TCA = 1,1,1-Trichloroethane
TCE = Trichloroethene
Freon 12 = Dichlorodifluoromethane
Freon 11 = Trichlorofluoromethane
1,1-DCA = 1,1-Dichloroethane
PCE = Tetrachloroethene

trans-1,2-DCE = trans-1,2-Dichloroethene
Al = Aluminum
Ba = Barium
Be = Beryllium
Ca = Calcium
Co = Cobalt
Cr = Chromium
Cu = Copper
Fe = Iron
K = Potassium
Mg = Magnesium
Mn = Manganese
Na = Sodium
Zn = Zinc

EC = Electrical Conductivity
TDS = Total Dissolved Solids

ATTACHMENT A

EPA DATA VALIDATION REPORTS

1. PESTICIDES/PCBs

2. SEMIVOLATILE ORGANICS

3. DRINKING WATER ORGANICS

4. TOTAL PETROLEUM HYDROCARBONS

5. TOTAL METALS

6. TOTAL DISSOLVED SOLIDS

7. GENERAL CHEMISTRY (CHLORIDE, NITRATE, SULFATE, FLUORIDE, TOTAL ALKALINITY, BICARBONATE, HYDROXIDE, TOTAL HARDNESS, pH AND SPECIFIC CONDUCTANCE)

PESTICIDES/PCBs

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ICF TECHNOLOGY INCORPORATED

URS TDMT Only TDCN: 0323
Project #: 62251 Loc: 09.63 Type: 63

MEMORANDUM

TO: Colette Kostelec
Environmental Engineer
South Coast Groundwater Section (H-6-4)

THROUGH: Richard Bauer
Environmental Scientist
Quality Assurance Management Section, (P-3-2)

FROM: Carolyn Studeny
Senior Organic Data Reviewer
Environmental Services Assistance Team (ESAT)

DATE: June 1, 1993

SUBJECT: Review of Analytical Data

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Newmark (Muscoy)
EPA SITE ID NO:	J5
CASE/SAS NO.:	LV3S39 Memo #01
SDG NO.:	YM972
LABORATORY:	Region IX, Las Vegas
ANALYSIS:	RAS Pesticides/PCBs
SAMPLE NO.:	YM972 through YM982 (see Case Summary)
COLLECTION DATE:	April 16 through 22, 1993
REVIEWER:	Ramaen Moezzi ESAT/ICF Technology, Inc.

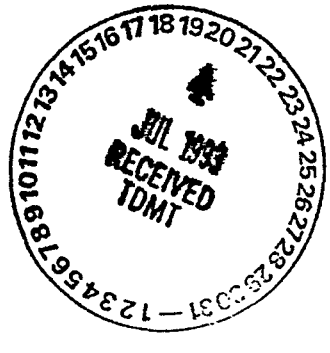
If there are any questions, please contact Carolyn Studeny at (415) 882-3184.

Attachment

cc: Brenda Bettencourt, Chief, Laboratory Support Section (P-3-1)
Steve Remaley, TPO USEPA Region IX

TPO: [ ]FYI [X]Attention [ ]Action

SAMPLING ISSUES: [ ]Yes [X]No



Data Validation Report

Case No.: LV3S39 Memo #01
Site: Newmark (Muscoy)
Laboratory: Region IX, Las Vegas
Reviewer: Rameen Moezzi, ESAT/ICF Technology, Inc.
Date: June 1, 1993

I. Case Summary

SAMPLE INFORMATION:

PEST Sample Numbers:	YM972 through YM982
Concentration and Matrix:	Low Level Water
Analysis:	RAS Pesticides/PCBs
SOW:	3/90
Collection Date:	April 16 through 22, 1993
Sample Receipt Date:	April 20 through 23, 1993
Extraction Date:	April 20 through 26, 1993
Analysis Date:	April 22 through 30, 1993

FIELD QC:

Trip Blanks (TB):	None
Field Blanks (FB):	None
Equipment Blanks (EB):	None
Water Blank (WB):	YM978
Background Samples (BG):	None
Field Duplicates (D1):	YM974 and YM975

METHOD BLANKS AND ASSOCIATED SAMPLES:

PBLK2:	YM972
PBLK3:	YM973 through YM977
PBLK4:	YM978 through YM980, YM980MS and YM980MSD
PBLK5:	YM981 and YM982

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifiers
2:	Sample Quantitation Limits of Target Compound List (TCL) Analytes

TPO ATTENTION:
The retention windows used were not those specified in the SOW. This does not affect the quality of the data.

METHOD NON-COMPLIANCE:
See TPO ATTENTION.

ADDITIONAL COMMENTS:
This report was prepared according to the EPA draft document, "National Functional Guidelines for Organic Data Review," December, 1990 (6/91 Revision).

MS - Matrix Spike; MSD - Matrix Spike Duplicate

II. Validation Summary

	PEST Acceptable/Comment	
HOLDING TIMES	[Y]	[ ]
GC/MS TUNE/GC PERFORMANCE	[Y]	[ ]
CALIBRATIONS	[Y]	[ ]
FIELD QC	[Y]	[ ]
LABORATORY BLANKS	[Y]	[ ]
SURROGATES	[Y]	[ ]
MATRIX SPIKE/DUPLICATES	[Y]	[ ]
INTERNAL STANDARDS	[N/A]	[ ]
COMPOUND IDENTIFICATION	[Y]	[ ]
COMPOUND QUANTITATION	[Y]	[ ]
SYSTEM PERFORMANCE	[Y]	[ ]

N/A - Not Applicable

III. Overall Assessment of Data

All of the QC requirements specified in the EPA Contract Laboratory Organic Statement of Work OLM01.1-OLM01.7 have been met.

ANALYTICAL RESULTS
TABLE 1A*

Case No.: LV3839 Memo #01
Site: Newmark (Muscoy)
Lab.: Region IX, Las Vegas
Reviewer: Ramsen Moezzi, ESAT/ICF Technology, Inc.
Date: June 1, 1993

Analysis Type: Low Level Water Samples for RAS Pesticides/PCBs

Concentration in ug/L

Station Location	MUNI-105-01			MUNI-101-01			MUNI-104-01			MUNI-104-02			MUNI-108-01			MUNI-112-01			WA01-01		
Sample I.D.	YM972			YM973			YM974 DI			YM975 DI			YM976			YM977			YM978 WB		
Date of Collection	4/16/93			4/20/93			4/20/93			4/20/93			4/20/93			4/20/93			4/21/93		
Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
No Pesticides/PCBs Detected	ND			ND			ND			ND			ND			ND			ND		

Station Location	MUNI-110-01			MUNI-111-01			MUNI-106-01			MUNI-102-01			Method Blanks								
Sample I.D.	YM979			YM980			YM981			YM982			PBLK 2-5								
Date of Collection	4/21/93			4/21/93			4/22/93			4/22/93											
Compound	Result	Val	Com				Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
No Pesticides/PCBs Detected	ND			ND			ND			ND			ND								

*The Sample Quantitation Limits are listed in Table 2
Val-Validity Refer to Data Qualifiers in Table 1B
Com-Comments Refer to the Corresponding Section in the Narrative for each letter.
CRQL-Contract Required Quantitation Limits
ND-Not Detected

D1, D2, etc -Field Duplicate Pairs
WB-Water Blank
BG-Background Sample

TABLE 1B
DATA QUALIFIERS

The definitions of the following qualifiers are prepared according to the EPA draft document, "National Functional Guidelines for Organic Data Review," December, 1990 (6/91 Revision).

NO QUALIFIERS indicate that the data are acceptable both qualitatively and quantitatively.

U — The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

L — Indicates results which fall below the Contract Required Quantitation Limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

J — The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

N — The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

NJ — The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ — The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R — The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

TABLE 2
Sample Quantitation Limits

Case No.: LV3S39 Memo #01
Site: Newmark (Muscoy)
Laboratory: Region IX, Las Vegas
Reviewer: Rameen Moezzi
ESAT/ICF Technology, Inc.
Date: June 1, 1993

Pesticides/PCBs	Units, ug/L	Q	C
alpha-BHC	0.05		
beta-BHC	0.05		
delta-BHC	0.05		
gamma-BHC (Lindane)	0.05		
Heptachlor	0.05		
Aldrin	0.05		
Heptachlor epoxide	0.05		
Endosulfan I	0.05		
Dieldrin	0.1		
4,4'-DDE	0.1		
Endrin	0.1		
Endosulfan II	0.1		
4,4'-DDD	0.1		
Endosulfan sulfate	0.1		
4,4'-DDT	0.1		
Methoxychlor	0.5		
Endrin ketone	0.1		
Endrin aldehyde	0.1		
alpha-Chlordane	0.05		
gamma-Chlordane	0.05		
Toxaphene	5		
Aroclor-1016	1		
Aroclor-1221	2		
Aroclor-1232	1		
Aroclor-1242	1		
Aroclor-1248	1		
Aroclor-1254	1		
Aroclor-1260	1		

Q - Qualifier
C - Comment

TABLE 2
(cont'd)

To calculate the sample quantitation limits, multiply CRQL by the following factors:

Sample No.	Pesticides
All samples	1.0
Method blanks	1.0

TPO: [ ]FYI [X]Attention [ ]Action Region IX

ORGANIC REGIONAL DATA ASSESSMENT

Case No. LV3S39 Memo #01 LABORATORY Region IX, Las Vegas

SDG NO. YM972 SITE NAME Newmark (Muscoy)

SOW 3/90 REVIEW COMPLETION DATE June 1, 1993

REVIEWER [ ] ESD [X] ESAT REVIEWER'S NAME Rameen Moezzi

NO. OF SAMPLES 11 WATER _____ SOIL _____ OTHER

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES			0	
2. GC-MS TUNE/GC PERFORMANCE			0	
3. INITIAL CALIBRATIONS			0	
4. CONTINUING CALIBRATIONS			0	
5. FIELD QC			0	
6. LABORATORY BLANKS			0	
7. SURROGATES			0	
8. MATRIX SPIKE/DUPLICATES			0	
9. REGIONAL QC			F	
10. INTERNAL STANDARDS			F	
11. COMPOUND IDENTIFICATION			0	
12. COMPOUND QUANTITATION			0	
13. SYSTEM PERFORMANCE			0	
14. OVERALL ASSESSMENT			0	

O = No problems or minor problems that affect data quality.
X = No more than about 5% of the data points have limitations on data quality. Samples are either qualified as estimates or rejected.
M = More than about 5% of the data points are qualified as estimates.
Z = More than about 5% of the data points have been rejected.
F = Not Applicable

TPO ATTENTION: The retention time windows used were not those specified by the SOW.

160 Spear Street, Suite 1380
San Francisco, CA
94105-1535
415/882-3000
Fax 415/882-3199

URS CONSULTANTS, INC.

JUN 28 1993

RECEIVED

ICF TECHNOLOGY INCORPORATED

URS TDMT Only TDCN: 0303
Project #: 62251 Loc: 09.63 Type: 63

MEMORANDUM

TO: Kevin Mayer
Environmental Engineer
South Coast Groundwater Section (H-6-4)

THROUGH: Richard Bauer
Environmental Scientist
Quality Assurance Management Section (P-3-2)

FROM: Carolyn Studeny
Senior Organic Data Reviewer
Environmental Services Assistance Team (ESAT)

DATE: June 25, 1993

SUBJECT: Review of Analytical Data

Attached are comments resulting from ESAT Region IX review of the following analytical data:

SITE:	Newmark-Muscoy
EPA SSI NO.:	J5
CERCLIS ID NO.:	CAD981434517
CASE/SAS NO.:	LV3S39 Memo #07
SDG NO.:	YM983
LABORATORY:	Region IX, Las Vegas
ANALYSIS:	RAS Pesticides/PCBs
SAMPLE NO.:	4 Water Samples (see Case Summary)
COLLECTION DATE:	May 4 through 6, 1993
REVIEWER:	Rameen Moezzi ESAT/ICF Technology, Inc.

If there are any questions, please contact Carolyn Studeny at (415) 882-3184.

Attachment

cc: Brenda Bettencourt, Chief, Laboratory Support Section (P-3-1)
Steve Remaley, TPO USEPA Region IX
Larry Zinky - URS SAC

TPO: [ ]FYI [X]Attention [ ]Action

SAMPLING ISSUES: [ ]Yes [X]No

JUN 1993 RECEIVED TDMT

Data Validation Report

Case No.: LV3S39 Memo #07
Site: Newmark-Muscoy
Laboratory: Region IX, Las Vegas
Reviewer: Rameen Moezzi, ESAT/ICF Technology, Inc.
Date: June 25, 1993

I. Case Summary

SAMPLE INFORMATION:

PEST Sample Numbers:	YM983 through YM986
Concentration and Matrix:	Low Level Water
Analysis:	RAS Pesticides/PCBs
SOW:	3/90
Collection Date:	May 4 through 6, 1993
Sample Receipt Date:	May 5 through 8, 1993
Extraction Date:	May 6 through 12, 1993
Analysis Date:	May 20 and 21, 1993

FIELD QC:

Trip Blanks (TB):	None
Field Blanks (FB):	None
Equipment Blanks (EB):	YM986
Background Samples (BG):	None
Field Duplicates (D1):	None

METHOD BLANKS AND ASSOCIATED SAMPLES:

PBLK1:	YM983
PBLK2:	YM984
PBLK3:	YM985, YM985MS, YM985MSD and YM986

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifiers
2:	Sample Quantitation Limits of Target Compound List (TCL) Analytes

TPO ATTENTION:
Quantitation limits for some of the target analytes in sample YM958 were estimated due to low decachlorobiphenyl surrogate recoveries.

ADDITIONAL COMMENTS:
This report was prepared according to the EPA draft document, "National Functional Guidelines for Organic Data Review," December, 1990 (6/91 Revision).

MS - Matrix Spike; MSD - Matrix Spike Duplicate

II. Validation Summary

	PEST Acceptable	/Comment
HOLDING TIMES	[Y]	[ ]
GC/MS TUNE/GC PERFORMANCE	[Y]	[ ]
CALIBRATIONS	[Y]	[ ]
FIELD QC	[Y]	[ ]
LABORATORY BLANKS	[Y]	[ ]
SURROGATES	[N]	[A]
MATRIX SPIKE/DUPLICATES	[Y]	[ ]
INTERNAL STANDARDS	[N/A]	[ ]
COMPOUND IDENTIFICATION	[Y]	[ ]
COMPOUND QUANTITATION	[Y]	[ ]
SYSTEM PERFORMANCE	[Y]	[ ]

N/A = Not Applicable

III. Validity and Comments

A. Due to surrogate recovery outside method QC limits, the quantitation limits for the following analytes are estimated (J) (see Table 2):

- Dieldrin, 4,4'-DDE, endrin, endosulfan II, 4,4'-DDD, endosulfan sulfate, 4,4'-DDT, methoxychlor, endrin ketone, endrin aldehyde, alpha-chlordane, gamma-chlordane, toxaphene, aroclor-1248, aroclor-1254 and aroclor-1260 in sample number YM985

Surrogates are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.

All samples are spiked with surrogate compounds prior to sample preparation. Surrogates provide information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

Recoveries of 44% and 41% were reported for the surrogate decachlorobiphenyl (DCB) in sample number YM985 on the DB-1701 and DB-5 columns, respectively. The QC advisory validation criteria for DCB recovery are 60-150%. Since the results are nondetected, false negatives may exist.

ANALYTICAL RESULTS
TABLE 1A*

Case No.: LV3839 Memo #07
Site: Newmark-Muscoy
Lab.: Region IX, Las Vegas
Reviewer: Rameen Moezzi, ESAT/ICF Technology, Inc.
Date: June 25, 1993

Analysis Type: Low Level Water Samples for RAS Pesticides/PCBs

Concentration in ug/L

Station Location	MUNI-103-01			MUNI-107-01			MUNI-109-01			WEQ109-01			Method Blank			Method Blank			Method Blank		
Sample I.D.	YM983			YM984			YM985			YM986 EB			PBLK1			PBLK2			PBLK3		
Date of Collection	05/04/93			05/05/93			05/06/93			05/06/93											
Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
No Pesticides/PCBs detected	ND			ND			ND			ND			ND			ND			ND		

*The Sample Quantitation Limits are listed in Table 2.
Val-Validity Refer to Data Qualifiers in Table 1B
Com-Comments Refer to the Corresponding Section in the Narrative for each letter
CRQL-Contract Required Quantitation Limits
NA-Not Analyzed ND-Not Detected

D1, D2, etc.-Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Travel Blank
BG-Background Sample

TABLE 1B
DATA QUALIFIERS

The definitions of the following qualifiers are prepared according to the EPA draft document, "National Functional Guidelines for Organic Data Review," December, 1990 (6/91 Revision).

NO QUALIFIERS indicate that the data are acceptable both qualitatively and quantitatively.

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

L Indicates results which fall below the Contract Required Quantitation Limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

TABLE 2
Sample Quantitation Limits

Case No.: LV3S39 Memo #07
Site: Newmark-Muscoy
Laboratory: Region IX, Las Vegas
Reviewer: Rameen Moezzi
ESAT/ICF Technology, Inc.
Date: June 25, 1993

Pesticides/PCBs	Units, ug/L	Q	C
alpha-BHC	0.05		
beta-BHC	0.05		
delta-BHC	0.05		
gamma-BHC (Lindane)	0.05		
Heptachlor	0.05		
Aldrin	0.05		
Heptachlor epoxide	0.05		
Endosulfan I	0.05		
Dieldrin	0.1	J	A
4,4'-DDE	0.1	J	A
Endrin	0.1	J	A
Endosulfan II	0.1	J	A
4,4'-DDD	0.1	J	A
Endosulfan sulfate	0.1	J	A
4,4'-DDT	0.1	J	A
Methoxychlor	0.5	J	A
Endrin ketone	0.1	J	A
Endrin aldehyde	0.1	J	A
alpha-Chlordane	0.05	J	A
gamma-Chlordane	0.05	J	A
Toxaphene	5	J	A
Aroclor-1016	1		
Aroclor-1221	2		
Aroclor-1232	1		
Aroclor-1242	1		
Aroclor-1248	1	J	A
Aroclor-1254	1	J	A
Aroclor-1260	1	J	A

Q - Qualifier
C - Comment

To calculate the sample quantitation limits, multiply CRQL by the following factors:

Sample No.	Pesticides
All samples	1.0
Method blanks	1.0

TPO: [ ]FYI [X]Attention [ ]Action Region IX

ORGANIC REGIONAL DATA ASSESSMENT

Case No. LV3S39 Memo #07 LABORATORY Region IX, Las Vegas

SDG NO. YM983 SITE NAME Newmark-Muscoy

SOW 3/90 REVIEW COMPLETION DATE June 25, 1993

REVIEWER [ ] ESD [X] ESAT REVIEWER'S NAME Rameen Moezzi

NO. OF SAMPLES 4 WATER _____ SOIL _____ OTHER

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES			O	
2. GC-MS TUNE/GC PERFORMANCE			O	
3. INITIAL CALIBRATIONS			O	
4. CONTINUING CALIBRATIONS			O	
5. FIELD QC			O	
6. LABORATORY BLANKS			O	
7. SURROGATES			M	
8. MATRIX SPIKE/DUPLICATES			O	
9. REGIONAL QC			F	
10. INTERNAL STANDARDS			F	
11. COMPOUND IDENTIFICATION			O	
12. COMPOUND QUANTITATION			O	
13. SYSTEM PERFORMANCE			O	
14. OVERALL ASSESSMENT			M	

O = No problems or minor problems that affect data quality.
X = No more than about 5% of the data points have limitations on data quality. Samples are either qualified as estimates or rejected.
M = More than about 5% of the data points are qualified as estimates.
Z = More than about 5% of the data points have been rejected.
F = Not Applicable

TPO ATTENTION: Quantitation limits for some of the target analytes in sample YM985 were estimated due to low decachlorobiphenyl surrogate recoveries.

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ICF TECHNOLOGY INCORPORATED

MEMORANDUM

TO: Kevin Mayer
Environmental Engineer
South Coast Groundwater Section (H-6-4)

THROUGH: Richard Bauer
Environmental Scientist
Quality Assurance Management Section (P-3-2)

FROM: Margie D. Weiner MDW
Senior Data Review Oversight Chemist
Environmental Services Assistance Team (ESAT)

DATE: July 14, 1993

SUBJECT: Review of Analytical Data

Attached are comments resulting from ESAT Region IX review of the following analytical data:

SITE:	Newmark-Muscoy
EPA SSI NO.:	J5
CERCLIS ID NO.:	CAD981434517
CASE/SAS NO.:	LV3S39 Memo #15
SDG NO.:	YM987
LABORATORY:	Region IX, Las Vegas
ANALYSIS:	RAS Pesticides/PCBs
SAMPLE NO.:	4 Water Samples (see Case Summary)
COLLECTION DATE:	May 24 and 25, 1993
REVIEWER:	Margaret L. May ESAT/ICF Technology, Inc.

If there are any questions, please contact Margie D. Weiner at (415) 882-3061.

Attachment

cc: Brenda Bettencourt, Chief, Laboratory Support Section (P-3-1)
Larry Zinky, URS SAC

TPO: [X]FYI [ ]Attention [ ]Action

SAMPLING ISSUES: [ ]Yes [X]No

Data Validation Report

Case No.: LV3S39 Memo #15
Site: Newmark-Muscoy
Laboratory: Region IX, Las Vegas
Reviewer: Margaret L. May, ESAT/ICF Technology, Inc.
Date: July 14, 1993

I. Case Summary

SAMPLE INFORMATION:

PEST Sample Numbers:	YM987, YM989, YM990 and YM992
Concentration and Matrix:	Low Level Water
Analysis:	RAS Pesticides/PCBs
SOW:	3/90
Collection Date:	May 24 and 25, 1993
Sample Receipt Date:	May 25 and 26, 1993
Extraction Date:	May 26 and 27, 1993
Analysis Date:	June 11 and 12, 1993

FIELD QC:

Trip Blanks (TB):	None
Field Blanks (FB):	None
Equipment Blanks (EB):	None
Background Samples (BG):	None
Field Duplicates (D1):	YM989 and YM990

METHOD BLANKS AND ASSOCIATED SAMPLES:

PBLK3:	YM987, YM992, YM992MS and YM992MSD
PBLK4:	YM989 and YM990

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifiers
2:	Sample Quantitation Limits of Target Compound List (TCL) Analytes

ADDITIONAL COMMENTS:

This report was prepared according to the EPA draft document, "National Functional Guidelines for Organic Data Review," December, 1990 (6/91 Revision).

MS - Matrix Spike; MSD - Matrix Spike Duplicate

II. Validation Summary

	PEST Acceptable	/Comment
HOLDING TIMES	[Y]	[ ]
GC/MS TUNE/GC PERFORMANCE	[Y]	[ ]
CALIBRATIONS	[Y]	[ ]
FIELD QC	[Y]	[ ]
LABORATORY BLANKS	[Y]	[ ]
SURROGATES	[Y]	[ ]
MATRIX SPIKE/DUPLICATES	[Y]	[ ]
INTERNAL STANDARDS	[N/A]	[ ]
COMPOUND IDENTIFICATION	[Y]	[ ]
COMPOUND QUANTITATION	[Y]	[ ]
SYSTEM PERFORMANCE	[Y]	[ ]

N/A = Not Applicable

III. Overall Assessment of Data

All of the QC requirements specified in the EPA Contract Laboratory Organic Statement of Work, OLM01.1-OLM01.7, have been met.

ANALYTICAL RESULTS
TABLE 1A

Case No.: LV3S39 Memo #15
Site: Newmark-Muscoy
Lab.: Region IX, Las Vegas
Reviewer: Margaret L. May, ESAT/ICF Technology, Inc.
Date: July 14, 1993

Analysis Type: Low Level Water Samples for RAS Pesticides/PCBs

Concentration in ug/L

Station Location	WMW-113-01			WMW-114-01			WMW-114-02			WMW-115-01			Method Blank			Method Blank					
Sample I.D.	YM987			YM989 D1			YM990 D1			YM992			PBLK3			PBLK4					
Date of Collection	5/24/93			5/25/93			5/25/93			5/24/93											
Compound	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com	Result	Val	Com
No Pesticides/PCBs Detected	ND			ND			ND			ND			ND			ND					

Val-Validity Refer to Data Qualifiers in Table 1B
Com-Comments Refer to the Corresponding Section in the Narrative for each letter.
CRQL-Contract Required Quantitation Limits

D1, D2, etc.-Field Duplicate Pairs
FB-Field Blank, EB-Equipment Blank, TB-Travel Blank
BG-Background Sample
ND-Not Detected

TABLE 1B
DATA QUALIFIERS

The definitions of the following qualifiers are prepared according to the EPA draft document, "National Functional Guidelines for Organic Data Review," December, 1990 (6/91 Revision).

NO QUALIFIERS indicate that the data are acceptable both qualitatively and quantitatively.

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

L Indicates results which fall below the Contract Required Quantitation Limit. Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

TABLE 2
Sample Quantitation Limits

Case No.: LV3S39 Memo #15
Site: Newmark-Muscoy
Laboratory: Region IX, Las Vegas
Reviewer: Margaret L. May
ESAT/ICF Technology, Inc.
Date: July 14, 1993

Pesticides/PCBs	Units, µg/L	Q	C
alpha-BHC	0.05		
beta-BHC	0.05		
delta-BHC	0.05		
gamma-BHC (Lindane)	0.05		
Heptachlor	0.05		
Aldrin	0.05		
Heptachlor epoxide	0.05		
Endosulfan I	0.05		
Dieldrin	0.1		
4,4'-DDE	0.1		
Endrin	0.1		
Endosulfan II	0.1		
4,4'-DDD	0.1		
Endosulfan sulfate	0.1		
4,4'-DDT	0.1		
Methoxychlor	0.5		
Endrin ketone	0.1		
Endrin aldehyde	0.1		
alpha-Chlordane	0.05		
gamma-Chlordane	0.05		
Toxaphene	5		
Aroclor-1016	1		
Aroclor-1221	2		
Aroclor-1232	1		
Aroclor-1242	1		
Aroclor-1248	1		
Aroclor-1254	1		
Aroclor-1260	1		

Q - Qualifier
C - Comment

TABLE 2
(cont'd)

To calculate the sample quantitation limits, multiply CRQL by the following factors:

Sample No.	Pesticides
YM987	1.00
YM989	1.00
YM990	1.00
YM992	1.00
Method Blanks	1.00

TPO: [X]FYI [ ]Attention [ ]Action Region IX

ORGANIC REGIONAL DATA ASSESSMENT

Case No. LV3S39 Memo #15 LABORATORY Region IX, Las Vegas

SDG NO. YM987 SITE NAME Newmark-Muscoy

SOW 3/90 REVIEW COMPLETION DATE July 14, 1993

REVIEWER [ ] ESD [X] ESAT REVIEWER'S NAME Margaret L. May

NO. OF SAMPLES 4 WATER _____ SOIL _____ OTHER

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES			0	
2. GC-MS TUNE/GC PERFORMANCE			0	
3. INITIAL CALIBRATIONS			0	
4. CONTINUING CALIBRATIONS			0	
5. FIELD QC			0	
6. LABORATORY BLANKS			0	
7. SURROGATES			0	
8. MATRIX SPIKE/DUPLICATES			0	
9. REGIONAL QC			N/A	
10. INTERNAL STANDARDS			N/A	
11. COMPOUND IDENTIFICATION			0	
12. COMPOUND QUANTITATION			0	
13. SYSTEM PERFORMANCE			0	
14. OVERALL ASSESSMENT			0	

O - No problems or minor problems that affect data quality.
X - No more than about 5% of the data points have limitations on data quality. Samples are either qualified as estimates or rejected.
M - More than about 5% of the data points are qualified as estimates.
Z - More than about 5% of the data points have been rejected.
N/A - Not Applicable

TPO ACTION ITEMS:

AREAS OF CONCERN: